

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claim 1. (currently amended) A method for improving the format efficiency of a hard disk of a hard disk drive, the hard disk drive having a rotary actuator and a read/write head, the read/write head having a read element and a write element, the method comprising:

determining a radial position of the read/write head with respect to the hard disk;
and
writing data tracks on the hard disk at varying distances from a center of the hard disk, ~~so that a length of an unused area between each of the data tracks and a subsequent servo sample is substantially equal to a separation between the read element and the write element as measured along a line that is tangent to a corresponding one of the data tracks~~ so that edges of the data tracks form a radius of curvature that is different than a radius of curvature formed by edges of subsequent servo samples.

Claim 2. (previous presented) The method according to claim 1, further comprising determining lengths of the data tracks from a look-up table.

Claim 3. (previously presented) The method according to claim 1, further comprising determining lengths of the data tracks based on a determination of the arc of the rotary actuator, the determined position of the read/write head with respect to the hard disk, and a physical offset between the read element and write element.

Claim 4. (previously presented) The method according to claim 1, further comprising determining lengths of the data tracks based on an angular position of the rotary actuator.

Claim 5. (currently amended) A disk drive, comprising:
a rotary actuator;

a read/write head having a read element that is offset from a write element; and
at least one hard disk drive, wherein the hard disk drive is configured to write data to data tracks on the a hard disk at varying distances from a center of the hard disk, and a length of an unused area between each of the data tracks and a subsequent servo sample is substantially equal to a separation between the read element and the write element as measured along a line tangent to a corresponding one of the data tracks so that edges of the data tracks form a radius of curvature that is different than a radius of curvature formed by edges of subsequent servo samples.

Claim 6. (previously presented) The hard disk drive according to claim 5, wherein a length of each data track is determined from a look-up table.

Claim 7. (currently amended) The hard disk drive according to claim 5, wherein lengths of the data tracks are based on a determination of the arc of the rotary actuator, a determined position of the read/write head with respect to the hard disk, and the physical offset between the read element and write element.

Claim 8. (previously presented) The hard disk drive according to claim 5, wherein lengths of the data tracks are based on an angular position of the rotary actuator.

Claim 9. (currently amended) A system for reading and writing data, comprising:

a rotary actuator;

a read/write head having a read element and a write element; and

at least one hard disk drive configured to write data to data tracks on a hard disk at varying distances from a center of the hard disk, wherein a length of an unused area between each of the data tracks and a subsequent servo sample is proportional to a separation between the read element and the write element as measured along a line tangent to a corresponding one of the data tracks so that edges of the data tracks form a radius of curvature that is different than a radius of curvature formed by edges of subsequent servo samples.

Claim 10. (previously presented) The system according to claim 9 wherein the length of each of the data tracks is determined from a look-up table.

Claim 11. (previously presented) The method according to claim 1, wherein writing the data tracks on the hard disk further comprises writing data tracks on the hard disk so that edges of the data tracks form a radius of curvature that is smaller than a radius of curvature formed by edges of the subsequent servo samples.

Claim 12. (previously presented) The disk drive according to claim 5, wherein the at least one hard disk drive is configured to write the data tracks on the hard disk so that edges of the data tracks form a radius of curvature that is smaller than a radius of curvature formed by edges of the subsequent servo samples.

Claim 13. (previously presented) The system according to claim 9, wherein the at least one hard disk drive is configured to write the data tracks on the hard disk so that edges of the data tracks form a radius of curvature that is smaller than a radius of curvature formed by edges of the subsequent servo samples.

Claim 14. (new) The system according to claim 9 wherein lengths of the data tracks between successive servo samples are based on an arc of the rotary actuator, a radial position of the read/write head with respect to the hard disk, and an offset between the read element and write element.